

REMARKS

Reconsideration and allowance of the subject application are respectfully requested. Claims 1-16 are now pending, claims 1, 6, 9, and 14 being independent. In this Reply, Applicant has amended claims 1, 4, 5, 6, and 7. Such amendments are for clarification purposes, and are not believed to narrow the scope of any pending claim. New claims 9-16 have been added.

Allowable Subject Matter

Applicant appreciates the Examiner's indication that claims 6-8 are allowed and that claims 2-3 would be allowable if rewritten in independent form to include the limitation of their base claim and any intervening claims. For at least reasons set forth below, Applicant respectfully submits that all pending claims should be indicated as allowable. With respect to the newly-added claims, Applicant notes that independent method claim 14 recites the functional aspects of allowable apparatus claim 6.

Abstract

In reply to the Examiner's objection to the Abstract of the Disclosure, Applicant has amended the Abstract to address issues set forth on page 2 of the Office Action. Accordingly, Applicant respectfully requests that the objection to the Abstract be withdrawn.

Prior Art Rejection

Claims 1 and 4-5 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over *Fossum et al.* (U.S. Patent 6,137,100) in view of *Murakami* (JP 06-178198). This rejection is respectfully traversed.

Independent claim 1 is directed to a digital camera comprising: a diaphragm, which controls an amount of incident light by varying a stop-amount; a solid-state imaging element; a controller; and a synthesizing processor. The solid-state imaging element receives the incident light passed through the diaphragm and has a plurality of pixels. Each pixel of the solid-state imaging element is divided into a main pixel, which has a first area for obtaining a high-sensitivity image signal, and a sub-pixel, having a second area, which is smaller than the first area, for obtaining a low-sensitivity image signal. The controller individually controls a gain amount of the high-sensitivity image signal and a gain amount of the low-sensitivity image signal in response to the stop-amount of the diaphragm. The synthesizing processor synthesizes the controlled high-sensitivity image signal and the controlled low-sensitivity image signal.

The primary reference, *Fossum*, discloses a CMOS-type color image sensor arrangement formed of a plurality of pixels. Recognizing that the color sensors of the type disclosed have varying responses for different colors, an embodiment of *Fossum*

illustrated in Fig. 1B adjusts the size of collection areas for different color pixels to equalize signals corresponding to pixels of different colors. (Col. 2, lines 38-44; col. 3, lines 57-59). Fossum discloses alternative ways to achieve such signal equalization, including providing separate gain elements for separate spectral band channels, noting, however, that this arrangement has drawbacks in terms of cost. (Col. 1, lines 65-67).

As recognized by the Examiner, Fossum fails to disclose an imaging arrangement as claimed in independent claim 1, which individually controls a gain amount of a high-sensitivity image signal (main pixel portion) and a gain amount of a low-sensitivity image signal (sub-pixel portion, which is smaller than the main pixel) in response to the stop-amount of the diaphragm. The Examiner relies on the secondary reference, Murakami, as allegedly making up for this deficiency, concluding on page 4 of the Office Action that:

[I]t would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Murakami's solid-state image pickup device with Fossum's solid-state image sensor for correcting the change of the sensitivity of a solid-state image pickup element due to the stop value of a camera lens (abstract).

For at least the following reasons, Applicant respectfully submits that this reasoning fails to establish *prima facie* obviousness of claim 1, or any claim depending therefrom.

To establish *prima facie* obviousness, all claim limitations must be taught or suggested by the prior art and the asserted modification or combination of prior art must be supported by some teaching, suggestion, or motivation in the applied reference or in knowledge generally available to one skilled in the art. *In re Fine*, 837, F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). Thus, "[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). The prior art must suggest the desirability of the modification in order to establish a *prima facie* case of obviousness. *In re Brouwer*, 77 F.3d 422, 425, 37 USPQ2d 1663, 1666 (Fed. Cir. 1995). It can also be said that the prior art must collectively suggest or point to the claimed invention to support a finding of obviousness. *In re Hedges*, 783 F.2d 1038, 1041, 228 USPQ 685, 687 (Fed. Cir. 1986); *In re Ehrreich*, 590 F.2d 902, 908-09, 200 USPQ 504, 510 (CCPA 1979).

In this case, claim 1 recites a solid-state imaging element in which each pixel is formed of a main pixel, for obtaining a high-sensitivity image signal, and a sub-pixel, for obtaining a low-sensitivity image signal, and specifies that a controller individually sets the gain for the high-sensitivity and low-sensitivity image signals based on the stop-amount of the diaphragm. *Fossum* fails to disclose such an arrangement. Likewise,

as described for example on page 3 of the present application, *Murakami* discloses a sensitivity correcting technique for solid-state image pickup elements, but not for an arrangement in which each pixel is formed of a main pixel area and a sub-pixel area. Thus, *Murakami* likewise fails to teach or suggest a form of gain control in which the gain for such main pixel and sub-pixel areas is individually set based on the stop-amount of the diaphragm.

Consequently, assuming that it would have been obvious to modify *Fossum* as alleged by the Examiner to incorporate the solid-state image pickup device of *Murakami* (which Applicant does not admit), such a modification would not result in a digital camera as set forth in claim 1.

Furthermore, Applicant respectfully submits that the Examiner's suggested modification of *Fossum* is not supported by motivation found in the prior art of record, or in knowledge generally available to those of ordinary skill in the art. Furthermore, it appears that such a modification would change the principle operation of the image sensor arrangement set forth in the primary reference. See e.g., MPEP, May 2004, § 2143.01, pg. 2100-132.

At least for these reasons, Applicant respectfully submits that the Office Action fails to establish *prima facie* obviousness of independent claim 1, or any claim depending therefrom. Applicant

respectfully submits that this same reasoning applies to independent method claim 9, and claims depending therefrom.

In view of the above, Applicant respectfully requests reconsideration and withdrawal of the Examiner's rejection under 35 U.S.C. § 103.

Conclusion

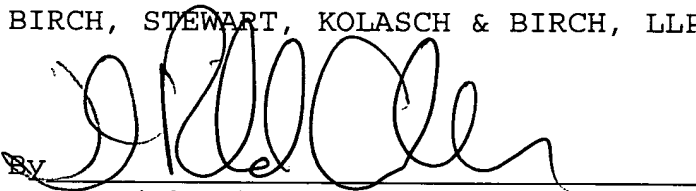
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Applicant respectfully petitions for a one (1) month extension of time pursuant to 37 C.F.R. §§ 1.17 and 1.136(a). A check in the amount of \$120.00 in payment of the extension of time fee is attached.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

A handwritten signature in black ink, appearing to read "D. Richard Anderson", is written over a horizontal line.

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DRA/jdm
0649-0934P

Attachment(s): Replacement Abstract of the Disclosure